

REMARKS

This application has been reviewed in light of the Office Action dated December 19, 2002. Claims 1-13 are presented for examination. Claims 1, 8-10 and 12 have been amended to define more clearly what Applicants regard as their invention. Claims 1, 10, and 12 are in independent form. Favorable reconsideration is requested.

Claims 1-13 were rejected under 35 U.S.C. § 112, second paragraph, as indefinite.

The phrase which formed the basis of this rejection ("in substance no light beams are emitted directly from the lamp through the optical element but in substance") has been eliminated from the claims. It is believed that the rejection under Section 112, second paragraph, has been obviated, and its withdrawal is therefore respectfully requested.

Claims 1-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Beeson et al. (U. S. Patent No. 5,396,350).

The aspect of the present invention to which claim 1 is directed, is a luminaire. The luminaire includes at least one lamp and a reflector surrounding the lamp. A reflective side of the reflector faces towards the lamp, and the reflector is formed with an emission opening for light emission. The luminaire also includes an optical element arranged in or before the emission opening for deflecting light beams which enter into and exit from the optical element such that light beams exit from the optical element at an exit angle which is smaller than a predetermined limit exit angle of about 70°. The optical element has a plate-like core of transparent material which is occupied on one side with microprisms formed by furrows. The microprisms have roots from which the microprisms taper. The reflector is shaped and arranged with reference to the lamp so that only light beams reflected at the reflector can exit the emission opening through the optical element.

Among other important features recited in claim 1 is the arrangement of the

reflector which surrounds the lamp, and of the optical element. As is stated in claim 1, those elements are arranged such that only light beams reflected at the reflector can exit the emission opening through the optical element. That is, the reflector has the particular function of reflecting light beams in such a way that they can exit the emission opening through the optical element. By virtue of this feature, light beams are evenly distributed over the emission opening, and the luminaire is capable of providing uniform light distribution (see paragraphs 9 and 10 of the substitute specification).

Beeson et al., as understood by Applicants, relates to an apparatus collimating light as applied as a backlighting means that provides relatively high light transmission for liquid crystal displays. The *Beeson et al.* system is composed of a light generating means 4 (see Figures 1 and 2), a slab waveguide 6 having a light acceptance surface 7, a transparent reflecting means 8 in contact with the slab waveguide 6, an optional input light polarizing means 10, a modulating means 12, an optional output light polarizing means 14, and a display means 16. It is specifically conceded on page 3 of the Office Action that *Beeson et al.* fails to disclose a reflector surrounding a lamp, with a reflective side facing towards the lamp and formed with an emission opening for emission of light.

The Office Action asserts that it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a reflector for the purpose of reflecting the light emitted from the light source towards a desired direction.

Applicants respectfully disagree with this assertion. Applicants submit that it would not have been obvious to modify *Beeson et al.* to include a reflector as recited in claim 1, for at least the following reasons. As discussed above, the *Beeson et al.* system contains a transparent reflecting means 8. The transparent reflecting means 8 is composed of an adhesion promoting layer 22, a substrate 24, a second adhesion promoting layer 26

and an array of microprism waveguides 28. The microprisms 28 are constructed to form a six-sided geometrical shape (column 5, line 14) having a light input surface 30 parallel to a light output surface 32, and sidewalls 33 and 34. Only sidewall 33 reflects light rays which are propagating through the waveguide 6 (column 5, lines 10-18, and Figure 2). Thus, in the *Beeson et al.* system, light beams emitted by the light generating means 4 are immediately coupled into the optical element (waveguide slab 6 and transparent reflecting means 8) via the side faces (sidewall 33) of the optical element without use of a reflector as recited in claim 1. The *Beeson et al.* system in fact does not even require a reflector to get the light into the optical element (waveguide 6). It is not at all clear what motivation a person of merely ordinary skill would have had to move the reflectors (microprisms 28) from where they are in *Beeson et al.*, to a position intercepting the light path from light source 4 into the waveguide 6, much less to make the changes in shape and function to the reflectors that would be necessary to meet the terms of claim 1. The assertion in the Office Action certainly does not identify any such motivation. Taken at face value, indeed, the Office Action could be read as asserting that the giving of any shape and of any placement one wished, to any reflective element would in all instances whatever, be obvious. That view, even if it were correct, would still beg the question - the routineer needs some reason to adapt the specific shape in question, and some reason to put the reflector in the particular position in question. That reason is precisely what is not provided in the Office Action, and not found in the art of record. Indeed, since the *Beeson et al.* arrangement has no conceivable need for a reflector at the position recited in claim 1, it is not understood how it could possibly have been obvious, not only to put a reflector there (where there is no need for one) but to shape it as recited in claim 1.

In view of the foregoing, Applicants submit that claim 1 is clearly allowable over *Beeson et al.*

Independent claims 10 and 12 include a similar feature of a reflector surrounding the lamp, where a side of the reflector faces towards the lamp being reflecting, and the reflector is formed with an emission opening for emission of light, and the reflector is shaped and arranged with reference to the lamp so that only light beams reflected at the reflector can exit the emission opening through the optical element, as discussed above in connection with Claim 1. Accordingly, claims 10 and 12 are believed to be patentable for at least the same reasons as discussed above in connection with claim 1.

The other rejected claims in this application depend from one or another of the independent claims discussed above, and, therefore, are submitted to be patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, individual reconsideration of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully

request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,


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